R E M A R K S

35 U.S.C. § 112 - CLAIM REJECTIONS

Claims 1-6, 14 and 42 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Particularly, independent claims 1 and 14 were identified as reciting the following limitation: "...a gas purchaser may divert a portion of the gas..." was thought to be confusing because the term "may" expresses a potential capability, not an actual method step. Therefore, it was stated as unclear whether the limitations following the term "may" were part of the claimed invention.

The claims have been amended to delete the term "may." It is believed that the claims, as amended, particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant respectfully requests withdrawal of the rejection based on 35 U.S.C. §112 and allowance of Claims 1-6, 14 and 42.

35 U.S.C. 103 - CLAIM REJECTIONS

Claim 14 stands rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,298,671 (Kennelley et al.) in view of U.S. Patent 5,129,759 (Bishop) and further in view of U.S. Patent 1,679,417 (Garnier). In light of the current amendments and following remarks, Applicant believes claims 1-6, 14, and 42 now stand in condition for allowance.

The present invention provides the unexpected result of achieving rapid trading that is accurately coordinated with the physical product being traded. Applicant teaches a method and system usable for short term trading of a gas that includes obtaining rights to use one or more low pressure underground salt formation storage facilities operating at a pressure ranging from 20 to 80 bars. A natural gas pipeline is connected to the storage facilities, the pipeline operating at nominally the same pressure as the storage facilities. This configuration enables a gas purchaser to divert a portion of the gas in the pipeline to the storage facility when the supply of gas exceeds the demand, and to divert gas from the storage facility to the pipeline when demand exceeds supply. Through modification of pressure in the pipeline, short term trades in the gas can be

conducted, through use of a trading system, and through use of a computer system for controlling gas flow by compressing or decompressing gas in the pipeline. The present invention allows for high flow rates both into and out of the low-pressure underground salt formation storage facilities and for rapid reversal of flow. The combination of high flow rates and the rapid reversal of flow provides the unexpected result of achieving rapid trading that is accurately coordinated with the product being traded.

Kennelley describes a production and transportation method in which subterranean gas is liquefied, then transported to a re-gasification platform, then offloaded, pressurized, and re-gasified for injection into a subterranean formation capable of distribution to market. (Kennelley, Abstract). Kennelley describes that typically, natural gas is available at 250 psig to 10,000 psig, is liquefied by refrigeration, then can be re-gasified through heat exchange. (Kennelley, Column 1, Line 45 – Column 2, Line 32). Re-gasified natural gas can be injected by pressurizing the gas while liquefied, or by conventional compression after re-gasification, then using a well to inject the gas into the subterranean formation, which operates at a pressure of 200 to 2500 psi. (Kennelley, Column 4, Lines 4-17 and Column 5, Lines 4-7). The gas from the subterranean formation is produced by a well on a platform and passed to a pipeline system. (Kennelley, Column 4, Lines 27-35).

Kennelley teaches away from the present invention. Kennelley teaches using a recovery platform 46 and a well 50 to extract product from the formation 44. Kennelley does not teach connection of a natural gas pipeline directly to a low pressure underground salt formation storage facility, the natural gas pipeline having a pressure nominally identical to that of the storage facility, such that through modification of the pressure in the pipeline, gas can be provided into or removed from the storage facility commensurate with supply and demand. Instead, Kennelley describes using a well 50 to produce a subterranean formation 44 used to contain re-gasified natural gas at a pressure and temperature dependent on the subterranean formation 44 used. Kennelley does not teach a system or method for conducting short term trades in gas using relative pressures between a pipeline and one or more low-pressure underground salt formation storage facilities. Still further, Kennelley does not teach or suggest the unexpected result of achieving rapid trading that is accurately coordinated with the physical product being traded.

Bishop describes an offshore storage facility that includes multiple underground salt caverns located beneath the ocean, which are connected to an offshore platform using dual wells, a first to pump and remove gas from the caverns, and a second to pump brine to and from the caverns, as needed to displace the gas contained within. (Bishop, Abstract). As gas is inserted, a corresponding volume of brine is pumped out of the cavern, and when gas is to be removed, brine is again pumped into the cavern. (Bishop, Column 1, Lines 15-25 and Column 2, Lines 26-38).

Bishop, also, teaches away from the present invention. Further, Bishop fails to teach the elements of Applicant's Claims 1 and 14 not taught by Kennelley. Specifically, Bishop does not teach connection of a natural gas pipeline directly to a low pressure underground salt formation storage facility, the natural gas pipeline having a pressure nominally identical to that of the storage facility, such that through modification of the pressure in the pipeline, gas can be provided into or removed from the storage facility commensurate with supply and demand. Particularly, Bishop fails to teach or suggest the unexpected result of achieving rapid trading that is accurately coordinated with the physical product being traded.

Instead, Bishop describes use of brine to displace stored gas to enable retrieval, and to enable the provision of more gas into an underground cavern. Bishop does not teach a system or method for conducting short term trades in gas using relative pressures between a pipeline and one or more low-pressure underground salt formation storage facilities.

Garnier describes a gas pumping system used to store compressed gas in a natural or artificial earth pocket, in conjunction with a power plant that employs the gas to operate an engine. (Garnier, Page 1, Lines 1-14). A pump is used to draw the gas through a series of pipes, valves, and a regulator that communicates with the gas pocket. (Garnier, Page 1, Lines 43-70).

Garnier, also, teaches away from the present invention. Further, Garnier fails to teach the elements of Applicant's Claims 1 and 14 not taught by Kennelley and/or Bishop. Specifically, Garnier does not teach connection of a natural gas pipeline directly to a low pressure underground salt formation storage facility, the natural gas pipeline having a pressure nominally identical to that of the storage facility, such that through modification of the pressure in the pipeline, gas can be provided into or removed from the storage facility commensurate with

supply and demand. Particularly, Garnier fails to teach or suggest the unexpected result of achieving rapid trading that is accurately coordinated with the physical product being traded.

Garnier instead describes use of a pump and valves that actuate responsive to pressure in the pipes to draw gas from an earth pocket. Garner does not teach a system or method for conducting short term trades in gas using relative pressures between a pipeline and one or more low pressure underground salt formation storage facilities.

Additionally, Applicant continues to assert that the combination of Kennelley, Bishop, and Garnier is improper. The proposed combination renders one or more items of the art of record non-functional for their intended purposes. Kennelley describes liquefying natural gas for transport, then re-gasifying the natural gas for storage underground, where it is produced by a well, then passed to a pipeline. Bishop instead requires production of offshore underground gas reservoirs using brine as a displacing fluid. Garnier describes use of a pump and a series of valves to flow gas from an earth pocket to a power plant for use. Use of a single pipeline, operated by a pump and valves, as described by Garner, is mutually exclusive with, and would be rendered inoperable through use of a brine displacement system, as described by Bishop, or production by a well, as described by Kennelley. Applicant would assert that it would not have been obvious to combine individual elements of these dissimilar cited references to teach various elements of Applicant's inventions, and the claimed invention must be examined as a whole, rather than each individual element of the invention. *See e.g. In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998). A patent composed of several elements is not proved obvious by demonstrating independent elements known in the prior art. *See KSR Int'l v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007). This is especially noteworthy, given that the combination of Kennely, Bishop, and Garnier materially alters the use and function of the systems described therein.

Claims 2-6 and 42 depend from Claim 1 and contain all limitations thereof. Because Claims 1 and 14 are patentable over Kennelley, Bishop, and Garnier, Applicant also believes Claims 2-6 and 42 are patentable over the art of record.

CONCLUSION

In light of the above amendments and remarks, Applicant respectfully submits that the application now stands in prima facie condition for allowance and courteously requests that this application be advanced to issue. Applicant is of the opinion that no additional fees are required with the submission of this response. However, if additional fees are required, the Commissioner is hereby respectfully authorized to deduct such fees from Deposit Account Number 13-2166. The Examiner is respectfully invited to call Applicant's representative, at 713-355-4200, to discuss any matters, that may arise, where such discussion may resolve such matters and place this application in condition for allowance.

Respectfully submitted,

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Date

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